

# DC-Micromotors

2 mNm

Precious Metal Commutation

For combination with

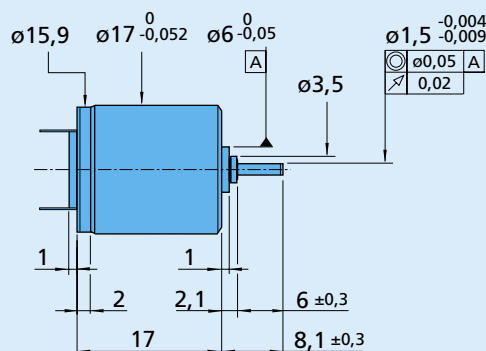
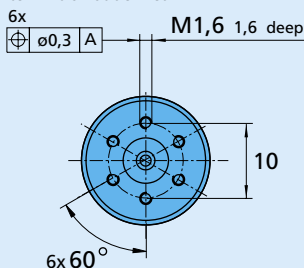
Gearheads:  
15A, 16A, 16/7

Encoders:  
IE2 – 16 ... 512

## Series 1717 ... SR

|   | 1717 T                                |   | 003 SR        | 006 SR                   | 012 SR | 018 SR | 024 SR |                                     |
|---|---------------------------------------|---|---------------|--------------------------|--------|--------|--------|-------------------------------------|
| 1 Nominal voltage                         | U <sub>N</sub>                        |   | 3             | 6                        | 12     | 18     | 24     | Volt                                |
| 2 Terminal resistance                     | R                                     |   | 1,07          | 4,30                     | 17,1   | 50,1   | 68,8   | Ω                                   |
| 3 Output power                            | P <sub>2 max.</sub>                   |   | 1,97          | 1,96                     | 1,97   | 1,50   | 1,96   | W                                   |
| 4 Efficiency                              | η <sub>max.</sub>                     |   | 69            | 69                       | 70     | 68     | 70     | %                                   |
| 5 No-load speed                           | n <sub>o</sub>                        |   | 14 000        | 14 000                   | 14 000 | 12 300 | 14 000 | rpm                                 |
| 6 No-load current (with shaft ø 1,5 mm)   | I <sub>o</sub>                        |   | 0,091         | 0,046                    | 0,023  | 0,013  | 0,011  | A                                   |
| 7 Stall torque                            | M <sub>H</sub>                        |   | 5,37          | 5,34                     | 5,38   | 4,66   | 5,36   | mNm                                 |
| 8 Friction torque                         | M <sub>R</sub>                        |   | 0,18          | 0,18                     | 0,18   | 0,18   | 0,17   | mNm                                 |
| 9 Speed constant                          | k <sub>n</sub>                        |   | 4 820         | 2 410                    | 1 210  | 709    | 602    | rpm/V                               |
| 10 Back-EMF constant                      | k <sub>E</sub>                        |   | 0,207         | 0,414                    | 0,829  | 1,410  | 1,660  | mV/rpm                              |
| 11 Torque constant                        | k <sub>M</sub>                        |   | 1,98          | 3,96                     | 7,92   | 13,50  | 15,90  | mNm/A                               |
| 12 Current constant                       | k <sub>I</sub>                        |   | 0,505         | 0,253                    | 0,126  | 0,074  | 0,063  | A/mNm                               |
| 13 Slope of n-M curve                     | Δn/ΔM                                 |   | 2 610         | 2 620                    | 2 600  | 2 640  | 2 610  | rpm/mNm                             |
| 14 Rotor inductance                       | L                                     |   | 17            | 65                       | 260    | 760    | 1 040  | μH                                  |
| 15 Mechanical time constant               | τ <sub>m</sub>                        |   | 16            | 16                       | 16     | 16     | 16     | ms                                  |
| 16 Rotor inertia                          | J                                     |   | 0,59          | 0,58                     | 0,59   | 0,58   | 0,59   | gcm <sup>2</sup>                    |
| 17 Angular acceleration                   | α <sub>max.</sub>                     |   | 92            | 92                       | 92     | 80     | 92     | ·10 <sup>3</sup> rad/s <sup>2</sup> |
| 18 Thermal resistance                     | R <sub>th 1</sub> / R <sub>th 2</sub> | 4,5 / 27                                |               |                          |        |        |        | K/W                                 |
| 19 Thermal time constant                  | τ <sub>w1</sub> / τ <sub>w2</sub>     | 2,0 / 210                               |               |                          |        |        |        | s                                   |
| 20 Operating temperature range:           |                                       | – 30 ... + 85 (optional – 55 ... + 125) |               |                          |        |        |        | °C                                  |
| – motor                                   |                                       |   |               |                          |        |        |        |                                     |
| – rotor, max. permissible                 |                                       | + 125                                   |               |                          |        |        |        | °C                                  |
| 21 Shaft bearings                         |                                       | sintered bronze sleeves                 | ball bearings | ball bearings, preloaded |        |        |        |                                     |
| 22 Shaft load max.:                       |                                       | (standard)                              | (optional)    | (optional)               |        |        |        |                                     |
| – with shaft diameter                     |                                       | 1,5                                     | 1,5           | 1,5                      |        | mm     |        |                                     |
| – radial at 3 000 rpm (3 mm from bearing) |                                       | 1,2                                     | 5             | 5                        |        | N      |        |                                     |
| – axial at 3 000 rpm                      |                                       | 0,2                                     | 0,5           | 0,5                      |        | N      |        |                                     |
| – axial at standstill                     |                                       | 20                                      | 10            | 10                       |        | N      |        |                                     |
| 23 Shaft play:                            |                                       |   |               |                          |        |        |        |                                     |
| – radial                                  | ≤                                     | 0,03                                    | 0,015         | 0,015                    |        | mm     |        |                                     |
| – axial                                   | ≤                                     | 0,2                                     | 0,2           | 0                        |        | mm     |        |                                     |
| 24 Housing material                       |                                       | steel, black coated                     |               |                          |        |        |        |                                     |
| 25 Weight                                 |                                       | 18                                      |               |                          |        |        |        | g                                   |
| 26 Direction of rotation                  |                                       | clockwise, viewed from the front face   |               |                          |        |        |        |                                     |
| Recommended values                        |                                       |   |               |                          |        |        |        |                                     |
| 27 Speed up to                            | n <sub>e max.</sub>                   |   | 10 000        | 10 000                   | 10 000 | 10 000 | 10 000 | rpm                                 |
| 28 Torque up to                           | M <sub>e max.</sub>                   |   | 2             | 2                        | 2      | 2      | 2      | mNm                                 |
| 29 Current up to (thermal limits)         | I <sub>e max.</sub>                   |   | 1,20          | 0,60                     | 0,30   | 0,18   | 0,15   | A                                   |

Orientation with respect to motor terminals not defined



1717 T

